CLAIMS

What is claimed is:

1.   A method for facilitating definition of an application to provide data from a plurality of disparate data sources to a user, the method comprising:

presenting a first user interface area to enable said user to define a data reference structure for at least one data source of said plurality of disparate data sources, said at least one data source containing said data;

presenting a second user interface area to enable said user to create at least one data structure corresponding to said data reference structure and connected to said at least one data source; and

presenting a third user interface area to enable said user to define application business logic to be performed on said data in connection with said at least one data structure.

2.   The method according to claim 1, further comprising presenting a fourth user interface area to enable said user to create presentation logic to display said data in an output view.

3.   The method according to claim 1, wherein said user defines an application server coupled to said at least one data source and connects to said application server to access said data.

4.   The method according to claim 1, wherein presenting said first user

interface area further comprises:

        facilitating selection of said at least one data source for said data reference

structure; and

        facilitating creation of a connection from said data reference structure to

said at least one data source.

5.   The method according to claim 4, wherein presenting said first user

interface area further comprises:

        facilitating verification of access to said at least one data source using said

data reference structure.

6.   The method according to claim 4, wherein said data reference structure is

configured to specify connection information for said connection to said at least

one data source.

7.   The method according to claim 4, wherein facilitating selection of said at

least one data source further comprises:

        facilitating selection of a data source type of said at least one data source;

and

        facilitating selection of said at least one data source based on said selected

data source type.

8. The method according to claim 1, wherein said at least one data structure is configured to identify said data within said at least one data source and to perform at least one predetermined operation on said data.

9. The method according to claim 1, wherein presenting said second user interface area further comprises:

facilitating definition of a reference link to said at least one data source; and

facilitating definition of a plurality of operation parameters within said at least one data structure, said plurality of operation parameters to form at least one operation to be performed on said data.

10. The method according to claim 9, wherein presenting said second user interface area further comprises:

facilitating creation of a relationship among said at least one data structure.

11. The method according to claim 9, wherein said reference link provides a reference to said at least one data source within said at least one data structure.

12.   The method according to claim 9, wherein presenting said second user interface area further comprises:

facilitating definition of at least one connection among said at least one data source.

13.   The method according to claim 9, wherein said at least one operation is a query to retrieve said data from said at least one data source based on a plurality of input parameters received from said user and to return said data to said user.

14.   The method according to claim 13, wherein each operation parameter of said plurality of operation parameters is a query parameter of said query, and wherein each input parameter of said plurality of input parameters is mapped into said query parameter.

15.   The method according to claim 9, wherein facilitating definition of said plurality of operation parameters further comprises:

facilitating definition of a parameter type for each operation parameter of said plurality of operation parameters;

facilitating definition of a plurality of parameter fields for said each operation parameter; and

facilitating input of a default value for each parameter field of said plurality of parameter fields.

16.   The method according to claim 1, wherein presenting said third user interface area further comprises:

facilitating definition of a set of components for said application business logic; and

facilitating definition of a set of responses for said application business logic, each response of said set of responses being associated with an output view and containing said data.

17.   The method according to claim 16, wherein presenting said third user interface area further comprises: .

facilitating definition of a first data model structure to store a plurality of input parameters received from said user.

18.   The method according to claim 16, wherein facilitating definition of said set of responses further comprises:

presenting a window area to enable said user visually to create a plurality of response icons, each response icon of said plurality of response icons corresponding to one response of said set of responses.

19.   The method according to claim 18, wherein facilitating definition of said set of components further comprises:

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presenting said window area to enable said user to visually create a

plurality of component icons, each component icon of said plurality of

component icons corresponding to one component of said set of components,

said window area further containing an input node icon for said application

business logic.

20.   The method according to claim 19, wherein facilitating definition of said

set of components further comprises:

facilitating visual creation of an input connection between a component

input node icon of said each component icon and said input node icon for said

application business logic; and

facilitating visual creation of an output connection between each

component result icon of said each component icon and one response icon of

said plurality of response icons.

21.   The method according to claim 16, wherein presenting said third user

interface area further comprises:

facilitating definition of a second data model structure to exchange said

data with said application business logic.

22.   The method according to claim 2, wherein presenting said fourth user

interface area further comprises:

facilitating creation of a view template for said output view; and

facilitating generation of text and tags for said view template.

23. The method according to claim 22, wherein said view template is a Hyper Text Markup Language (HTML) view template.

24. The method according to claim 22, wherein said tags enable said output view to write dynamic data.

25. The method according to claim 22, wherein presenting said fourth user interface area further comprises:

facilitating visual mapping of said tags to each node of a plurality of nodes of said view template.

26. The method according to claim 1, further comprising presenting a fifth user interface area to enable said user to define an action within said application, said action being configured to trigger said application business logic.

27. The method according to claim 26, wherein presenting said fifth user interface area further comprises:

facilitating connection of said action to at least one input view containing a plurality of input parameters from said user; and

facilitating connection of said action to an output view containing a set of responses of said application business logic.

28. A system for facilitating definition of an application to provide data from a plurality of disparate data sources to a user, the system comprising:

means for presenting a first user interface area to enable said user to define a data reference structure for at least one data source of said plurality of disparate data sources, said at least one data source containing said data;

means for presenting a second user interface area to enable said user to create at least one data structure corresponding to said data reference structure and connected to said at least one data source; and

means for presenting a third user interface area to enable said user to define application business logic to be performed on said data in connection with said at least one data structure.

29. The system according to claim 28, further comprising means for presenting a fourth user interface area to enable said user to create presentation logic to display said data in an output view.

30. The system according to claim 28, wherein said user defines an application server coupled to said at least one data source and connects to said application server to access said data.

31.   The system according to claim 28, further comprising:

means for facilitating selection of said at least one data source for said

data reference structure; and

means for facilitating creation of a connection from said data reference

structure to said at least one data source.

32.   The system according to claim 31, further comprising:

means for facilitating verification of access to said at least one data source

using said data reference structure.

33.   The system according to claim 31, wherein said data reference structure is

configured to specify connection information for said connection to said at least

one data source.

34.   The system according to claim 31, further comprising:

means for facilitating selection of a data source type of said at least one

data source; and

means for facilitating selection of said at least one data source based on

said selected data source type.

35.   The system according to claim 28, wherein said at least one data structure is configured to identify said data within said at least one data source and to perform at least one predetermined operation on said data.

36.   The system according to claim 28, further comprising:

means for facilitating definition of a reference link to said at least one data source; and

means for facilitating definition of a plurality of operation parameters within said at least one data structure, said plurality of operation parameters to form at least one operation to be performed on said data.

37.   The system according to claim 36, further comprising:

means for facilitating creation of a relationship among said at least one data structure.

38.   The system according to claim 36, wherein said reference link provides a reference to said at least one data source within said at least one data structure.

39.   The system according to claim 36, further comprising:

means for facilitating definition of at least one connection among said at least one data source.

40. The system according to claim 36, wherein said at least one operation is a query to retrieve said data from said at least one data source based on a plurality of input parameters received from said user and to return said data to said user.

41. The system according to claim 40, wherein each operation parameter of said plurality of operation parameters is a query parameter of said query, and wherein each input parameter of said plurality of input parameters is mapped into said query parameter.

42. The system according to claim 36, further comprising:

means for facilitating definition of a parameter type for each operation parameter of said plurality of operation parameters;

means for facilitating definition of a plurality of parameter fields for said each operation parameter; and

means for facilitating input of a default value for each parameter field of said plurality of parameter fields.

43. The system according to claim 28, further comprising:

means for facilitating definition of a set of components for said application business logic; and

means for facilitating definition of a set of responses for said application business logic, each response of said set of responses being associated with an output view and containing said data.

44. The system according to claim 43, further comprising:

means for facilitating definition of a first data model structure to store a plurality of input parameters received from said user.

45. The system according to claim 43, further comprising:

means for presenting a window area to enable said user visually to create a plurality of response icons, each response icon of said plurality of response icons corresponding to one response of said set of responses.

46. The system according to claim 45, further comprising:

means for presenting said window area to enable said user to visually create a plurality of component icons, each component icon of said plurality of component icons corresponding to one component of said set of components, said window area further containing an input node icon for said application business logic.

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47.   The system according to claim 46, further comprising:

means for facilitating visual creation of an input connection between a

component input node icon of said each component icon and said input node

icon for said application business logic; and

means for facilitating visual creation of an output connection between

each component result icon of said each component icon and one response icon

of said plurality of response icons.

48.   The system according to claim 43, further comprising:

means for facilitating definition of a second data model structure to

exchange said data with said application business logic.

49.   The system according to claim 29, further comprising:

means for facilitating creation of a view template for said output view;

and

means for facilitating generation of text and tags for said view template.

50.   The system according to claim 49, wherein said view template is a Hyper

Text Markup Language (HTML) view template.

51.   The system according to claim 49, wherein said tags enable said output

view to write dynamic data.

52.   The system according to claim 49, further comprising:

means for facilitating visual mapping of said tags to each node of a

plurality of nodes of said view template.

53.   The system according to claim 28, further comprising means for

presenting a fifth user interface area to enable said user to define an action

within said application, said action being configured to trigger said application

business logic.

54.   The system according to claim 53, further comprising:

means for facilitating connection of said action to at least one input view

containing a plurality of input parameters from said user; and

means for facilitating connection of said action to an output view

containing a set of responses of said application business logic.

55.   A system for facilitating definition of an application to provide data from

a plurality of disparate data sources to a user, the system comprising:

a data reference editor to present a first user interface area to enable said

user to define a data reference structure for at least one data source of said

plurality of disparate data sources, said at least one data source containing said

data;

a data structure editor to present a second user interface area to enable

said user to create at least one data structure corresponding to said data

reference structure and connected to said at least one data source; and

a process editor to present a third user interface area to enable said user to

define application business logic to be performed on said data in connection

with said at least one data structure.

56.   The system according to claim 55, further comprising a view editor to

present a fourth user interface area to enable said user to create presentation

logic to display said data in an output view.

57.   The system according to claim 55, wherein said user defines an

application server coupled to said at least one data source and connects to said

application server to access said data.

58.   The system according to claim 55, wherein said data reference editor

further:

        facilitates selection of said at least one data source for said data reference

structure; and

        facilitates creation of a connection from said data reference structure to

said at least one data source.

59. The system according to claim 58, wherein said data reference editor further facilitates verification of access to said at least one data source using said data reference structure.

60. The system according to claim 58, wherein said data reference structure is configured to specify connection information for said connection to said at least one data source.

61. The system according to claim 58, wherein said data reference editor further:

facilitates selection of a data source type of said at least one data source; and

facilitates selection of said at least one data source based on said selected data source type.

62. The system according to claim 55, wherein said at least one data structure is configured to identify said data within said at least one data source and to perform at least one predetermined operation on said data.

63. The system according to claim 55, wherein said data structure editor further:

facilitates definition of a reference link to said at least one data source;

and

facilitates definition of a plurality of operation parameters within said at

least one data structure, said plurality of operation parameters to form at least

one operation to be performed on said data.

64.   The system according to claim 63, wherein said data structure editor

further:

facilitates creation of a relationship among said at least one data structure.

65.   The system according to claim 63, wherein said reference link provides a

reference to said at least one data source within said at least one data structure.

66.   The system according to claim 63, wherein said data structure editor

further:

facilitates definition of at least one connection among said at least one

data source.

67.   The system according to claim 63, wherein said at least one operation is a

query to retrieve said data from said at least one data source based on a plurality

of input parameters received from said user and to return said data to said user.

68.   The system according to claim 67, wherein each operation parameter of said plurality of operation parameters is a query parameter of said query, and wherein each input parameter of said plurality of input parameters is mapped into said query parameter.

69.   The system according to claim 63, wherein said data structure editor further:

        facilitates definition of a parameter type for each operation parameter of said plurality of operation parameters;

        facilitates definition of a plurality of parameter fields for said each operation parameter; and

        facilitates input of a default value for each parameter field of said plurality of parameter fields.

70.   The system according to claim 55, wherein said process editor further:

        facilitates definition of a set of components for said application business logic; and

        facilitates definition of a set of responses for said application business logic, each response of said set of responses being associated with an output view and containing said data.

71.   The system according to claim 70, further comprising a data model editor to facilitate definition of a first data model structure to store a plurality of input parameters received from said user.

72.   The system according to claim 70, wherein said process editor further presents a window area to enable said user visually to create a plurality of response icons, each response icon of said plurality of response icons corresponding to one response of said set of responses.

73.   The system according to claim 72, further comprises a component editor to present said window area to enable said user to visually create a plurality of component icons, each component icon of said plurality of component icons corresponding to one component of said set of components, said window area further containing an input node icon for said application business logic.

74.   The system according to claim 73, wherein said component editor further:
        facilitates visual creation of an input connection between a component input node icon of said each component icon and said input node icon for said application business logic; and
        facilitates visual creation of an output connection between each component result icon of said each component icon and one response icon of said plurality of response icons.

75. The system according to claim 71, wherein said data model editor further facilitates definition of a second data model structure to exchange said data with said application business logic.

76. The system according to claim 56, wherein said view editor further:

facilitates creation of a view template for said output view; and

facilitates generation of text and tags for said view template.

77. The system according to claim 76, wherein said view template is a Hyper Text Markup Language (HTML) view template.

78. The system according to claim 76, wherein said tags enable said output view to write dynamic data.

79. The system according to claim 76, wherein said view editor further facilitates visual mapping of said tags to each node of a plurality of nodes of said view template.

80. The system according to claim 55, further comprising an action editor to present a fifth user interface area to enable said user to define an action within

said application, said action being configured to trigger said application business logic.

81. The system according to claim 80, wherein said action editor further:

facilitates connection of said action to at least one input view containing a plurality of input parameters from said user; and

facilitates connection of said action to an output view containing a set of responses of said application business logic.

82. A computer readable medium containing executable instructions, which, when executed in a processing system, cause said processing system to perform a method for facilitating definition of an application to provide data from a plurality of disparate data sources to a user, the method comprising:

presenting a first user interface area to enable said user to define a data reference structure for at least one data source of said plurality of disparate data sources, said at least one data source containing said data;

presenting a second user interface area to enable said user to create at least one data structure corresponding to said data reference structure and connected to said at least one data source; and

presenting a third user interface area to enable said user to define application business logic to be performed on said data in connection with said at least one data structure.

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83.   The computer readable medium according to claim 82, wherein said method further comprises presenting a fourth user interface area to enable said user to create presentation logic to display said data in an output view.

84.   The computer readable medium according to claim 82, wherein said user defines an application server coupled to said at least one data source and connects to said application server to access said data.

85.   The computer readable medium according to claim 82, wherein presenting said first user interface area further comprises:

facilitating selection of said at least one data source for said data reference structure; and

facilitating creation of a connection from said data reference structure to said at least one data source.

86.   The computer readable medium according to claim 85, wherein presenting said first user interface area further comprises:

facilitating verification of access to said at least one data source using said data reference structure.

87. The computer readable medium according to claim 85, wherein said data reference structure is configured to specify connection information for said connection to said at least one data source.

88. The computer readable medium according to claim 85, wherein facilitating selection of said at least one data source further comprises:

facilitating selection of a data source type of said at least one data source; and

facilitating selection of said at least one data source based on said selected data source type.

89. The computer readable medium according to claim 82, wherein said at least one data structure is configured to identify said data within said at least one data source and to perform at least one predetermined operation on said data.

90. The computer readable medium according to claim 82, wherein presenting said second user interface area further comprises:

facilitating definition of a reference link to said at least one data source; and

facilitating definition of a plurality of operation parameters within said at least one data structure, said plurality of operation parameters to form at least one operation to be performed on said data.

91.   The computer readable medium according to claim 90, wherein presenting said second user interface area further comprises:

facilitating creation of a relationship among said at least one data structure.

92.   The computer readable medium according to claim 90, wherein said reference link provides a reference to said at least one data source within said at least one data structure.

93.   The computer readable medium according to claim 90, wherein presenting said second user interface area further comprises:

facilitating definition of at least one connection among said at least one data source.

94.   The computer readable medium according to claim 90, wherein said at least one operation is a query to retrieve said data from said at least one data source based on a plurality of input parameters received from said user and to return said data to said user.

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95.   The computer readable medium according to claim 94, wherein each operation parameter of said plurality of operation parameters is a query parameter of said query, and wherein each input parameter of said plurality of input parameters is mapped into said query parameter.

96.   The computer readable medium according to claim 90, wherein facilitating definition of said plurality of operation parameters further comprises:

facilitating definition of a parameter type for each operation parameter of said plurality of operation parameters;

facilitating definition of a plurality of parameter fields for said each operation parameter; and

facilitating input of a default value for each parameter field of said plurality of parameter fields.

97.   The computer readable medium according to claim 82, wherein presenting said third user interface area further comprises:

facilitating definition of a set of components for said application business logic; and

facilitating definition of a set of responses for said application business

logic, each response of said set of responses being associated with an output

view and containing said data.

98.   The computer readable medium according to claim 97, wherein

presenting said third user interface area further comprises:

facilitating definition of a first data model structure to store a plurality of

input parameters received from said user.

99.   The computer readable medium according to claim 97, wherein

facilitating definition of said set of responses further comprises:

presenting a window area to enable said user visually to create a plurality

of response icons, each response icon of said plurality of response icons

corresponding to one response of said set of responses.

100.   The computer readable medium according to claim 99, wherein

facilitating definition of said set of components further comprises:

presenting said window area to enable said user to visually create a

plurality of component icons, each component icon of said plurality of

component icons corresponding to one component of said set of components,

said window area further containing an input node icon for said application

business logic.

101.   The computer readable medium according to claim 100, wherein facilitating definition of said set of components further comprises:

facilitating visual creation of an input connection between a component input node icon of said each component icon and said input node icon for said application business logic; and

facilitating visual creation of an output connection between each component result icon of said each component icon and one response icon of said plurality of response icons.

102.   The computer readable medium according to claim 97, wherein presenting said third user interface area further comprises:

facilitating definition of a second data model structure to exchange said data with said application business logic.

103.   The computer readable medium according to claim 83, wherein presenting said fourth user interface area further comprises:

facilitating creation of a view template for said output view; and

facilitating generation of text and tags for said view template.

104.   The computer readable medium according to claim 103, wherein said view template is a Hyper Text Markup Language (HTML) view template.

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105.   The computer readable medium according to claim 103, wherein said tags enable said output view to write dynamic data.

106.   The computer readable medium according to claim 103, wherein presenting said fourth user interface area further comprises:

facilitating visual mapping of said tags to each node of a plurality of nodes of said view template.

107.   The computer readable medium according to claim 82, wherein said method further comprises presenting a fifth user interface area to enable said user to define an action within said application, said action being configured to trigger said application business logic.

108.   The computer readable medium according to claim 107, wherein presenting said fifth user interface area further comprises:

facilitating connection of said action to at least one input view containing a plurality of input parameters from said user; and

facilitating connection of said action to an output view containing a set of responses of said application business logic.